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ABSTRACT

A study investigated the effects of two different aspects of career education: cognitive and affective instruction. First, two cognitive teaching methods--direct instruction and individual contracting--were examined. Second, the influence of affective instruction was evaluated. Subjects were 138 students at a continuation high school in Southern California who ranged in age from 16 to 20. Students were divided into four treatment groups: affective and direct instruction, direct instruction only, affective instruction and independent contracts, and independent contracts only. Student scores on assessments of career knowledge and attitudes were analyzed before and after treatment. Data analysis revealed no significant differences between any groups on either pretest measure, but significant posttest differences were found between instructional methods and affective learning groups. Results indicated that both direct instruction and affective instruction were effective in increasing knowledge and in improving attitudes. Each treatment was significant by itself. The effects of direct cognitive instruction were significant regardless of affective instruction, and the effects of affective instruction were significant regardless of direct or contract experience. (YLB)

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Direct Instruction and Affective Learning in Career Education

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Two primary objectives of career education are to provide students with adequate information about career alternatives and to develop positive attitudes toward the world of work. This is accomplished through instruction which integrates cognitive knowledge with affective learning.

Positive attitudes can motivate cognitive learning, and cognitive knowledge can improve attitudes (Yongue, Burton & Todd, 1983). Both knowledge and attitudes are essential and are integrated in successful career education programs. This paper presents the results of a study of which investigated these approaches.

Review of the Literature

Cognitive Instruction

Evaluation of the cognitive gains of career education has shown that career education does increase cognitive achievement (Johnson, 1970; Rhodes, 1974; Yongue, Todd & Burton, 1981).

One of the teaching strategies most closely related to increased cognitive achievement is direct instruction. This takes place in a teacher centered, structured classroom where students have little choice of activities. There is an academic focus on factual information, and controlled practice is stressed. The teacher provides clear goals, and the students focus on one definite learning task at a time. The teacher monitors student progress and provides continuous feedback. This form of instruction emphasizes measurable high achievement and produces increased cognition (Cotterell, 1982; Good, 1983; Rosenshine, 1979).

An alternative to direct instruction is independent contracting which is sometimes used for individualized study. Contracting

encompasses a course of study where the requirements are determined by the teacher and agreed to by the student. The methods of completing the requirements are left to the student to accomplish at his or her own pace while meeting with the teacher on an individual basis. In a study by Graff, Danish & Austin (1972), programmed self instruction was rated as being more effective than one-to-one counseling or group counseling in many respects. Gilbert and Ewing (1971) compared self instruction with traditional one-to-one counseling, using a career decision making manual. Students in their study reported that the self instruction was equally or more effective than one-to-one counseling.

Affective Instruction

Studies of affective education programs (Baskin & Hess, 1980; Sprinthall, 1980) have shown their effectiveness in many general classroom situations, but the affective aspects which are specific to career education are often neglected. Nevertheless, cognitive knowledge and affective learning cannot be taught in isolation. Having information alone is not enough unless it has personal meaning and students can apply it to their own lives.

Positive career attitudes are a result of internalizing career information, increasing self esteem and self understanding, clarifying values and promoting interpersonal relations (Barrett & Tinsley, 1977; Fuqua & Hartman, 1983; Hawkins, Bradley & White, 1977; National Center, 1983; Super, 1983; Vermilye, 1979; Wise, 1979). Improving career attitudes is accomplished through affective instruction, which brings counseling practices into the classroom.

Methodology

The purpose of this study was to investigate the effects of two different aspects of career education: cognitive and affective instruction. Two research questions were developed. First, two cognitive teaching methods, direct instruction and individual contracting, were examined.

1. What is the difference in career cognitive knowledge between students who are exposed to direct instruction and those who use individual contracts?

Second, the influence of affective instruction was evaluated.

2. What is the difference in career attitudes between students who receive affective instruction and those who do not?

The questions were addressed by analyzing student scores on assessments of career knowledge and attitudes.

Subjects

150 students were randomly selected from the population of a continuation high school in Southern California. The students ranged in age from 16 to 20. They represented a wide range of abilities and socio-economic backgrounds. None of the students had previously been exposed to career education as a formal course of study.

These students were randomly assigned to four different groups. Then treatment was randomly assigned to each group. Twelve students were unable to complete the treatment resulting in 138 students, 75 males and 63 females. The four groups were as follows:

Group 1: Affective and direct instruction

Group 2: Direct instruction only

Group 3: Affective instruction and independent contracts

Group 4: Independent contracts only

During field testing a fifth group was used consisting of

affective instruction only, but since there was no exposure to cognitive knowledge, it was considered inappropriate to test these students on this aspect of career education.

Instruments

All students were pretested and posttested on two instruments which were developed specifically for use in this study. Both instruments were administered to students at other high schools and then revised.

The test of cognitive information consisted of 30 items and was designed to measure the students' knowledge of work activities, (e.g. "Which of the following jobs require social interaction?"), employability skills (e.g. "When filling out an application form, you should . . ."), and career center materials (e.g. "Where can you get information on the preparation and training required for the job you want?"). There were ten multiple choice items, eight true/false items and twelve matching items. The range of possible scores for this test was 0 to 30. Higher scores indicated greater knowledge of career information. The reliability coefficients for this instrument ranged from .82 to .90 using correlations between forms, Spearman-Brown and Guttman split half methods.

The career attitude assessment consisted of 20 items which were designed to measure the students' affective dispositions toward self, others, school and work (e.g. "Having a career that matches my personal values is important to me.") Responses were made on a five point Likert scale from "strongly agree" to "strongly disagree." The scale of values ranged from one to five for positive items and was reversed for negatively stated items. Higher scores indicated more positive career attitudes. Each item was given five points resulting

in a range of possible scores from 0 to 100. The reliability of the career attitude assessment was high (.91) using Cronbach's alpha.

Procedures

Students were given pretests for cognitive knowledge and career attitudes on the first day of classes. Each group was exposed to five units of career education: career awareness, career research, decision making, employability skills and career planning.

The instructional treatments delivered cognitive information on various aspects of different careers through teacher lectures, student research and class discussions for direct instruction and through student research using an instructional manual for contract students. The cognitive information included job characteristics, such as the working conditions and work activities of various work environments. External forces on career decisions, such as the influences of the family, society and the economy were presented. All the students determined their personal interests and abilities through the California Occupational Preference Survey and the California Abilities Profile. Students were given specific research questions to be answered about various jobs and were instructed on how to obtain the information using such career center materials as the Occupational Outlook Handbook, (Department, 1980) the Worker Trait Group Guide (Appalachia, 1978) and the computerized Eureka Career Information System (Eureka, 1984). Decision making skills based on a five step cognitive model and employability skills such as job hunting, applying and interviewing techniques were also presented to all students.

Groups 1 and 2 received direct instruction from the teacher in the career center on a daily basis (one hour each day for six weeks). Groups 3 and 4 received independent contracts and worked on a teacher

made instructional manual using the career center materials and meeting with the teacher on an individual basis (once a week). The students in these contract groups spent the same amount of time over a six week period, but not on a daily basis. These students kept time logs which were monitored by the teacher.

Affective instruction activities were presented to groups 1 and 3. These students participated in self concept exercises designed to increase self knowledge and self esteem using 101 Ways to Enhance Self Concept in the Classroom (Canfield & Wells, 1976). Values clarification activities concentrated on self understanding in relation to work values using Values Clarification (Simon, Howe & Kerschenbaum, 1972). Students studied interpersonal relations such as positive regard for others and communication skills using Tribes (Gibbs & Allen, 1978). Coping skills, such as handling crises and transitions, and dealing with change were also presented to all students in these groups.

Each group experienced a total of thirty hours of instruction with the same teacher in charge of each group. On the last day of each class, the students were given the posttests for career cognitive knowledge and for career attitude assessment.

Results

The effects of cognitive and affective instruction were examined by analyzing the scores on the cognitive knowledge pretest, career attitude pretest, cognitive knowledge posttest and career attitude posttest.

Analysis of variance was administered to assess:

1. differences in cognitive knowledge scores between direct instruction and independent contracts
2. differences in attitude scores between groups who did or did not receive affective instruction

3. possible interaction between the factors (cognitive and affective instruction)

Statistical analysis was performed using the Statistical Packages for the Social Sciences X (SPSS Inc., 1983) on a VAX computer system.

Pretests

Analysis of the data revealed no significant differences between any groups on either pretest measure. A one way analysis of variance (ANOVA) of the pretest scores of cognitive knowledge yielded an F value of .8504 ($p>.05$). The same procedure produced an F value of .7613 ($p>.05$) for the career attitude pretest scores. Pretest means and standard deviations are presented in Table 1 as evidence of the similarity of the groups before treatments were administered and for comparison with the posttest results.

TABLE 1

Pre and Posttests for Career Cognitive Knowledge

	Pre			Post		
	Means	S.D.	n	Means	S.D.	n
Group 1	15.21	3.52	34	27.32	2.59	34
Group 2	15.60	3.15	35	25.37	4.72	35
Group 3	15.52	3.62	33	23.00	4.12	33
Group 4	14.94	3.54	36	19.33	4.92	36

Pre and Posttests of Career Attitudes

	Pre			Post		
	Means	S.D.	n	Means	S.D.	n
Group 1	64.97	12.85	34	91.41	7.91	34
Group 2	66.37	9.18	35	80.80	7.79	35
Group 3	64.33	11.87	33	87.36	8.58	33
Group 4	63.61	10.53	36	75.53	7.44	36

Posttests

The posttest means and standard deviations for cognitive knowledge and career attitudes are also presented in Table 1. All treatments were effective to some degree on both measures. However, Group 1, which received both direct instruction and affective learning, achieved the highest scores.

An examination of Table 2, shows significant main effects. There were significant differences between the groups on both posttest measures. A two way ANOVA of the posttest scores for cognitive knowledge resulted in an F value of 52.86 ($p<.01$) for cognitive instructional methods and an F value of 15.37 ($p<.01$) for affective instruction.

Analysis of variance showed that scores of direct instruction students were significantly higher ($p<.01$) than contract students. An additional and surprising finding was that there were also significant differences in cognitive knowledge between those students who received affective instruction and those who did not ($p<.01$).

TABLE 2

Summary of Two way Anova of Posttest Scores

Posttest of Cognitive Knowledge

Source of Variation	Sum of Squares	DF	Mean Squares	F	Significance of F
Instruction	934.720	1	934.720	52.85776	0.000*
Affective	271.870	1	271.870	15.37409	0.000*
Interaction	25.329	1	25.329	1.432314	0.234
Residual	2369.613	134	17.684		
Total	3616.406	137	26.397		

*p<.01

Table 3 presents a similar analysis for career attitudes posttest scores. A two way ANOVA of the posttest scores for career attitudes resulted in an F value of 69.07 ($p<.01$) between those students who received affective instruction and those who did not, and an F value of 12.01 ($p<.01$) was obtained for cognitive instructional groups.

Scores of affective instruction students were significantly higher ($p<.01$) for both direct instruction and contract students. Again, a surprising finding was that attitudes also differed significantly depending on whether the students received direct instruction or individual contracts ($p<.01$).

TABLE 3

Summary of Two way Anova of Posttest Scores

Posttest of Career Attitudes

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif. of F
Instruction	754.804	1	754.804	12.00883	0.001*
Affective	4341.139	1	4341.139	69.06696	0.000*
Interactions	12.910	1	12.910	0.20539	0.651
Residual	8422.444	134	62.854		
Total	13584.870	137	99.160		

*$p<.01$

Tables 2 and 3 also show that there was no significant interaction. This indicates that direct cognitive instruction and affective instruction were both individually effective. Direct instruction influenced cognitive knowledge and career attitudes of students whether they participated in affective instruction or not. Affective instruction was effective in improving career attitudes and cognitive knowledge regardless of the cognitive instructional method.

Table 4 provides a comparison of posttest scores for the total group, for those students who received direct instruction, contracts, affective instruction and no affective instruction and for all four groups. Group 1 (Direct and Affective Instruction) received the highest scores on both knowledge (27.32) and attitude (91.41), and Group 4 (Contract and No Affective Instruction) received the lowest scores on both measures (19.33 and 75.53).

On the test of career cognitive knowledge, students involved in direct instruction had a mean score of 26.33 compared to those on contracts who had 21.09. Affective instruction students had a mean of 25.19 while students who did not receive affective instruction averaged 22.31. The total group mean was 23.71.

For the test of career attitudes, students involved in affective instruction had a mean score of 89.42 compared to 78.13 for those who had no affective instruction. Direct instruction students had a mean of 86.03, while contract students averaged 81.19. The total group mean was 83.61.

TABLE 4
Comparison of Posttest Results

	N	Knowledge Mean	Attitude Mean
Total	138	23.71	83.61
Direct	69	26.33	86.03
Contract	69	21.09	81.19
Affective	67	25.19	89.42
No Affective	71	22.31	78.13
Group 1 (Direct & Affect)	34	27.32	91.41
Group 2 (Direct & No Affect)	35	25.37	80.80
Group 3 (Contract & Affect)	33	23.00	87.36
Group 4 (Contract & No Affect)	36	19.33	75.53

Discussion

Analysis of the data revealed no significant differences between any groups on either pretest measure, bu there were significant posttest differences between instructional methods and affective learning groups.

The results indicated that subjects who received direct instruction showed a significant difference in cognitive knowledge when compared to the students who received independent contracts.

The study also demonstrated that those subjects who participated in affective instruction showed a significant difference in career attitudes when compared to the students who did not.

Even though interactive effects were expected, the results indicated that each treatment was significant by itself. The effects of direct cognitive instruction were significant regardless of affective instruction, and the effects of affective instruction were significant regardless of direct or contract experience.

Since direct instruction was not only effective in delivering career information, but also in improving career attitudes, it may be that success in acquiring cognitive information increases confidence and self esteem which, in turn, improves attitudes.

Since affective instruction was not only effective in improving career attitudes, but also increases cognitive knowledge, a possible conclusion is that students comprehend cognitive knowledge more readily when they understand how to apply it to their personal lives. This may provide motivation for acquiring more information.

Perhaps these findings should not be surprising since it is impossible to separate feelings from learning. Cognitive information appears to be even more effective when it is internalized. While students must have cognitive information about their career options, they also need to make that knowledge personally meaningful. They are influenced by factual knowledge and intellectual development in relation to their personal feelings. When they understand how their feelings, values and attitudes influence their career choices, they can make more effective use of cognitive information. In this way cognition and affect both improve attitudes and increase knowledge.

This study shows that both direct instruction and affective instruction were effective in increasing knowledge and in improving attitudes. Since these are the goals of career education, these findings are important to career education in two ways. For cognitive instruction, this study validates the school effectiveness literature concerning direct instruction and reafffirms the importance of continued contact with the teacher in a structured situation. This cognitive instructional method was superior to contract instruction. In regard to affective aspects, these results show that affective instruction can no longer be ignored. Including affective instruction further increases cognitive knowledge and improves attitudes. For optimal results, both teaching strategies should be integral parts of any career education program since both direct and affective instruction promote the goals of career education.

More research is needed to compare direct instruction and independent contracts to other instructional methods, such as

cooperative learning. A closer examination of various types of affective learning activities could be beneficial in determining which are more effective than others. At the present time a longitudinal study of these students' career success is under way.

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